



Montana Fish, Wildlife & Parks

Region One
490 North Meridian Rd.
Kalispell, MT 59901
(406) 752-5501
FAX: 406-257-0349
Ref: JS057-12
July 2, 2012

Ladies and Gentlemen:

Fish, Wildlife & Parks (FWP), Region One, has completed an environmental assessment (EA) to continue the experimental removal of lake trout in Swan Lake, Montana. In 2009 FWP approved a three-year experimental removal project as a feasibility study to determine if gill nets can effectively reduce the number of nonnative lake trout to improve conditions for bull trout and kokanee. While much has been learned with regard to our ability to affect annual lake trout year class strength, the overall effect this level of removal has on the lake trout population and subsequent benefits to bull trout and kokanee remain unknown. The proposed action would involve contracting with professional fishery consultants to conduct gillnetting over a three-week period beginning late August or early September 2012. Additionally, FWP and Swan Valley Bull Trout Working Group (SVBTWG) personnel will remove spawning adult lake trout during the months of October and November by gillnetting along known lake trout spawning sites. These activities would be conducted annually for five years. This period of time was chosen because it represents the shortest amount of time necessary to fully assess and realize the effects of previous removal efforts. Information obtained from the proposed action will help to determine feasibility and effectiveness of alternatives for managing the lake trout population (e.g., suppression of the population). All lake trout sampled during the project will be killed; those salvageable and of suitable size for consumption will be field dressed and donated to food banks or other facilities.

Following a 30-day public comment period, FWP received 127 written comments by mail or email. Of the comments, 108 supported the proposed action, 14 were in opposition, and five individuals had questions regarding the assessment, but did not comment either for or against the proposal. Based on the results from the first three years of the project, analysis in the draft EA, and comments received, it is recommended that the proposed project be continued. A copy of the decision notice is enclosed for your information.

Sincerely,

A handwritten signature in dark ink that reads "James R. Satterfield Jr." The signature is written in a cursive, slightly slanted style.

James R. Satterfield Jr., Ph.D.
Regional Supervisor

/ni

Enclosure

c: *Governor's Office, Attn: Mike Volesky, PO Box 200801, Helena, MT 59620-0801

*Environmental Quality Council, Capitol Building, Helena, MT 59620-1704

*Dept. of Environmental Quality, Planning, Prevention & Assistance, PO Box 200901, Helena, MT 59620-0901

*Dept. of Environmental Quality, Permitting Compliance, PO Box 200901, Helena, MT 59620

*Montana Fish, Wildlife & Parks: Director's Office, Legal Unit, & Fisheries

*MT Historical Society, State Historic Preservation Office, 225 North Roberts, Veteran's Memorial Bldg., Helena, MT 59620

*Tom McDonald, Division Administrator, CSKT Natural Resources, PO Box 278, Pablo, MT 59855

*Montana State Library, 1515 East Sixth Ave., Helena, MT 59620-1800

*Montana State Parks Association, PO Box 699, Billings, MT 59103

*DNRC, PO Box 201601, Helena, MT 59620-1601

*DNRC, Steve Frye

*Adam McLane, Montana Environmental Information Center, PO Box 1184, Helena, MT 59624
George Ochenski, PO Box 689, Helena, MT 59624

*Wayne Hirst, Montana State Parks Foundation, PO Box 728, Libby, MT 59923

*Joe Gutkoski, President, Montana River Action Network, 304 N 18th, Bozeman, MT 59715

*Senators Shannon Augare, Carmine Mowbray, & Verdell Jackson

*Representatives Joe Read, Janna Taylor, Daniel Salomon, Scott Reichner, & Mark Blasdel
Lake County Commissioners, 106 Fourth Avenue E, Polson, MT 59860

Flathead County Commissioners, 800 S Main Street, Kalispell, MT 59901

Interested parties



ENVIRONMENTAL ASSESSMENT AND DECISION NOTICE
FOR AN
EXTENSION OF EXPERIMENTAL LAKE TROUT REMOVAL EFFORTS IN
SWAN LAKE, MONTANA

July 2, 2012

Project Proposal and Justification:

Montana Fish, Wildlife & Parks (FWP) proposes to continue an experimental removal of lake trout in Swan Lake, Montana. In 2009 FWP approved a three-year experimental removal project as a feasibility study to determine if gill nets can effectively reduce the number of nonnative lake trout to improve conditions for bull trout and kokanee. While much has been learned with regard to our ability to affect lake trout year class strength from one year to the next, the overall effect this level of removal has on the lake trout population and benefits to bull trout and kokanee remains unknown. The proposed action would involve contracting with professional fishery consultants to conduct gillnetting over a three-week period beginning late August or early September 2012. Additionally, FWP and Swan Valley Bull Trout Working Group (SVBTWG) personnel will gillnet spawning adult lake trout during the months of October and November along known lake trout spawning sites. These activities would be repeated annually for five years. This period of time was chosen because it represents the shortest interval necessary to fully assess and realize the effects of previous removal efforts. Information obtained from the proposed action will help to determine feasibility and effectiveness of alternatives for managing the lake trout population (e.g., suppression of the population) and potential benefits to other fish species. All lake trout netted during the project will be killed; those salvageable and of suitable size for consumption will be field dressed and donated to food banks or other facilities.

The Swan Valley has historically been home to a large, stable bull trout population. Swan Lake has popular recreational fisheries for bull trout, kokanee and northern pike. However, in 1998 anglers began to occasionally catch adult-sized (20-30 inch) lake trout from Swan Lake and the Swan River. This caused alarm because lake trout are not native and are notorious for rapidly expanding and dominating fish communities in lakes at the expense of bull trout and kokanee salmon, particularly in lakes like Swan Lake with Mysis shrimp. In the years following the original discovery, catch rates of lake trout have increased and natural reproduction has been documented. Research efforts since 2006 were made to examine the population size and structure of the expanding lake trout population, to identify impacts to other fish species, and explore options for managing the lake trout population to minimize effects to other fish species. The goal of this project is to determine the feasibility of using gill nets as a management tool for reducing the population of lake trout to benefit bull trout and kokanee populations in Swan Lake.

Location of Project:

This project will be conducted on Swan Lake, located approximately 10 miles southeast of the city of Bigfork, Montana. Swan Lake drains to the Swan River, a major tributary to Flathead Lake.

Environmental and Social Impacts:

Conducting gillnetting to reduce lake trout numbers will have unintended impacts to the bull trout population through bycatch-related mortality. Mortality associated with the bycatch of bull trout will be minimized by rapid removal and resuscitation of all live bull trout captured in the nets, as was done during research efforts from 2009-2011. Additionally, juvenile netting will be conducted during the time in which a majority of the adult bull trout have migrated out of the lake and into Swan River tributaries in preparation for fall spawning. A portion of the bull trout captured will be dead and these fish will be retained and used for additional research purposes. Overall, bull trout bycatch mortality during lake trout gillnetting will likely be insignificant relative to the potential direct impacts of lake trout on the bull trout population through competition and predation. Bycatch of other fish species is expected to be minimal, as was observed during 2009-2011 netting efforts.

Some anglers may be temporarily disrupted, precluded from fishing in chosen locations, or disturbed by sampling activities. However, due to the timing of this project and short duration, such effects will be minimal.

Public Involvement:

In compliance with the Montana Environmental Policy Act, a draft environmental assessment (EA) was prepared and released for a 30-day public comment period from May 15 through June 15, 2012. Legal ads were placed in local and surrounding area newspapers, a news release was released by FWP, and notices were mailed to selected persons, legislators, and several conservation groups. Copies of the EA were available for viewing at the FWP Region 1 headquarters in Kalispell, the FWP state headquarters in Helena, and electronically on the FWP web site.

Public Comments/Responses:

FWP received 127 written comments by mail or email. Of the comments, 108 supported the proposed action, 14 were in opposition, and five individuals had questions regarding the assessment, but did not comment either for or against the proposal.

Many of the comments received simply stated that they either supported or did not support the proposed extension. Several comments in opposition to the proposed action included personal attacks or did not provide any substantive information regarding the proposal. No response was issued to these individuals in this decision notice. Several key questions were raised during the public comment period, and responses to them are as follows:

Why not use anglers to reduce the number of lake trout (through derbies and/or bounties)?

The goal of the proposed extension of lake trout removal efforts is to determine if gill nets are an effective management tool to reduce the lake trout population and benefit bull trout and kokanee salmon. Research efforts from 2009-2011 documented that gill nets can be effective in creating lake trout total annual mortality rates beyond what the population can sustain. However, more time is necessary to determine if this will

translate into a reduced lake trout population and increased bull trout and kokanee numbers. The use of angler harvest is not consistent with the previous three years of research. Upon completion of this experiment, long-term management of the lake trout in Swan Lake will be discussed. At that time, alternatives including angler harvest through derbies and/or bounties may be considered.

The idea of utilizing anglers to reduce lake trout was considered during the 2009 EA process. At that time FWP concluded the lake trout population in Swan Lake was newly established and therefore the number and size of lake trout had yet to reach a point where anglers could substantially reduce the lake trout population. In order to reach the mortality rate targets specified in the EA, a considerably larger number of fish needed to be removed than would be possible through angling alone. An additional problem with using anglers to reduce lake trout numbers also lies in the anglers' inability to distinguish between lake trout and bull trout, a species listed as threatened under the Endangered Species Act.

What do you do with all of the fish caught in the nets? Are they available for people to eat?

All lake trout captured during the proposed extension of removal efforts are measured for total length and a subsample are weighed for condition analysis. All lake trout fit for human consumption are cleaned, packed on ice, and delivered to the Flathead Food Bank for distribution. Tissue samples taken in 2008 revealed that lake trout less than 22" had mercury levels deemed safe by the Food and Drug Administration if eaten in moderation by women and children. Therefore, only fish less than 22" are cleaned and sent to the food bank. Lake trout greater than 22", or fish unsuitable for consumption, are either kept for further scientific analysis, given to wildlife rehabilitation centers, or are donated to bear research to be used as a trapping lure.

The EA only contains two alternatives, the proposed action and the no-action alternative. Why are there no other alternatives being considered?

The goal of the proposed extension of lake trout removal efforts is to determine if gill nets are an effective management tool to reduce the lake trout population and benefit bull trout and kokanee salmon. Research efforts from 2009-2011 documented that gill nets can be effective in creating lake trout total annual mortality rates higher than the population can sustain. However, more time is necessary to determine if this will translate into a reduced lake trout population and increased bull trout and kokanee numbers. This EA was written to allow FWP to complete this research experiment and provides the shortest amount of time necessary to evaluate the overall effectiveness of the gill net removal. At the conclusion of this experiment, FWP, with recommendations from the Swan Valley Bull Trout Working Group (SVBTWG), will determine the long-term management of lake trout in Swan Lake. At that time, alternatives including, but not limited to, gillnetting will be discussed.

Given the large size and complex structure of Swan Lake, it seems unlikely that netting will provide a long term permanent solution unless it is maintained on a regular basis. Continued netting would result in continued high operation and administrative costs, as well as bycatch impacts to bull trout.

An objective of the proposed continuation of this experimental lake trout removal is to determine the feasibility of the use of gill nets to reduce the population of lake trout and benefit bull trout and kokanee. Part of the feasibility will be the administrative and operational costs associated with a large-scale netting operation. It is acknowledged in

the EA that currently complete eradication of lake trout in Swan Lake is not attainable so treatment would have to continue indefinitely. However, identifying cost effective, long-term alternatives associated with lake trout reduction is a prudent management action to conserve the ecologically threatened bull trout and recreationally important kokanee salmon.

Why not open up the angler limit on lake trout?

The EA released for a continuation of the experimental lake trout removal efforts is specific to finishing the netting experiment that was initiated in 2009. While much has been learned with regard to our ability to inflict high mortality rates on the lake trout population, the benefits to bull trout and kokanee remain unknown. At the conclusion of this experiment FWP, with recommendations from the SVBTWG, will discuss long-term management alternatives for Swan Lake. At that time alternatives including liberalized limits on lake trout will be discussed. A potential problem with “opening up” limits on lake trout lies in the anglers’ inability to distinguish between lake trout and bull trout. At this time anglers are catching more bull trout than lake trout so bull trout mortality from angling could be an issue. Anglers attempting to catch a large limit may not be as careful in species identification and inadvertently kill bull trout. In addition, we are not aware of anglers catching more than the legal limit of 10 lake trout at this time.

What measure of success have you had so far?

Defining the success of this project can be difficult. Specific evaluation criteria identified during the 2009 EA process have been used to examine the effects of the work conducted from 2009-2011. A thorough analysis of these evaluation criteria can be found in the three-year summary report (http://fwp.mt.gov/news/newsReleases/fishing/nr_0673.html). This report describes total annual lake trout mortality exceeding levels the lake trout can sustain. Additionally, results from both juvenile and spawner netting for lake trout depict a length-frequency shift toward lake trout that are newly recruited to the nets being used (juvenile netting) and lake trout that have recently reached sexual maturity (spawner netting). Both of these indices indicate that netting efforts have been effective in reducing lake trout cohort strength from one year to another. However, while much has been learned with regard to our ability to increase annual lake trout mortality, how this translates to the overall lake trout population and the resulting bull trout and kokanee populations remains unknown.

Why not make Swan Lake a multiple species fishery and let the bull trout and all the species survive together?

Swan Lake is currently, and has been historically, a multi-species fishery. Anglers have the opportunity to catch bull trout, rainbow trout, kokanee salmon, northern pike, westslope cutthroat trout, and yellow perch. Based on other examples in northwest Montana, Idaho, and British Columbia, lake trout typically cannot co-exist with bull trout without negatively affecting bull trout. During the time in which bull trout were listed as threatened under the Endangered Species Act, Swan Lake was the only Montana water body left open to angling for bull trout. This fishery existed because of the robust population of bull trout in Swan Lake. A goal of this experiment is to identify management alternatives to reduce the lake trout population, increase the bull trout and kokanee numbers, and maintain viable fisheries for fish species other than lake trout. Additionally, lake trout inhabit many nearby waters and providing a bull trout fishery in Swan Lake adds to the diverse angling opportunities sportsmen can find in the Flathead Valley.

Many comments from individuals both in support of and in opposition to the proposed action voiced concern regarding bycatch of non-target fish species, particularly bull trout. Several individuals expressed a desire to see a minimum threshold (based on redd counts) in which netting would be discontinued if bull trout numbers dropped below a certain point.

Inadvertent bycatch of fish species other than lake trout is of considerable concern to FWP. Of particular concern is the bycatch of bull trout, a fish species listed as threatened under the Endangered Species Act. This concern is compounded by an observed decreasing trend of adult bull trout abundance (reflected by redd counts) in recent years in the Swan drainage. Netting operations from 2009-2011 resulted in relatively low numbers of fish, other than lake trout, being caught in the nets. A complete list of the numbers of fish caught as a result of this research project and an in-depth analysis of the potential effects the netting can have on the Swan Lake bull trout population can be found in the three-year summary report for work conducted from 2009-2011 (http://fwp.mt.gov/news/newsReleases/fishing/nr_0673.html). Analysis of the potential impacts the netting bycatch is having on the bull trout population suggests that netting bycatch is part of but not solely responsible for the recent downward trend. It is likely that competition and predation from an increasing lake trout population and angler harvest are also contributing factors to this declining trend.

A goal of this experiment is to determine if gill nets can be an effective tool in reducing the number of lake trout and increase the number of bull trout and kokanee in Swan Lake. A component of this study is to examine if the benefits of a reduced lake trout population outweigh the potential risks associated with gill net bycatch of non-target fish (i.e., bull trout and kokanee). The potential effects of this bycatch mortality have been, and will continue to be, evaluated on an annual basis to determine if bull trout mortality is exceedingly high. This experiment should be viewed as an adaptive management approach, as techniques and methods can be modified (i.e., ceasing netting, abandoning one portion of the netting, changes in soak times, etc.) if potential problems are identified.

Establishing a threshold based solely on redd numbers is potentially problematic, as there is a lag time between when mortality occurred and when the fish would be expected to return to spawn several years later. Therefore examining bull trout juvenile abundance in addition to redd numbers will likely increase our ability to make inferences on the potential effects associated with bycatch mortality. FWP and the SVBTWG will examine these data annually to determine if changes in the methodology are warranted. Additionally, over the next two years FWP and the SVBTWG will commit to the collection of supporting data and analysis necessary to establish thresholds of minimum bull trout numbers. This threshold will be helpful in determining if the project needs to be adaptively changed (i.e., continued, modified, or terminated).

Finally, as a proactive measure and an effort to offset the increased bull trout mortality associated with gillnetting, the FWP commission approved a regulation change in 2012 eliminating angler harvest of bull trout in Swan Lake by converting to catch and release only. Prior to this change, anglers could harvest one bull trout daily from Swan Lake. A creel survey initiated in 2009-2010 revealed an estimated angler harvest of up to 178 bull trout annually. Estimated bycatch mortality from the proposed extension of removal efforts is 150-175 bull trout annually, roughly the same number of fish previously harvested by anglers. Because this level of bull trout mortality was sustainable for many

years prior to lake trout establishment, substituting gill net mortality for angler harvest mortality should be sustainable as well. Also, if reduced lake trout abundance is improving survival for bull trout their abundance would be expected to start increasing.

Many comments supported the project, but specified that the project should be continued for a period of ten years with review after five years.

In 2009 FWP approved plans for a three-year experimental removal of lake trout in Swan Lake. This experiment was initiated as a feasibility study to determine if gill nets can be an effective management tool to reduce the population of lake trout and increase the bull trout and kokanee salmon populations. While much information has been gained with regard to our abilities to impact annual lake trout year class strength, the overall effect this has had on the lake trout population and benefits to bull trout and kokanee remain unknown. The proposed five-year extension of this experiment was chosen as it represents the shortest amount of time necessary to see a response in bull trout and kokanee, and also represents a realistic project time frame given the challenges of securing funding for a project of this magnitude. The project will be reviewed annually to determine if the necessary data is being collected to provide the highest level of analysis and whether bycatch mortality is exceedingly high.

Decision Notice:

Recently established lake trout pose an imminent threat to the native bull trout and recreationally important kokanee populations of Swan Lake. In 2009 FWP approved plans for a three-year experimental removal of lake trout in Swan Lake. This experiment was initiated to determine if gill nets can be an effective tool to reduce the lake trout population and benefit bull trout and kokanee. Evaluation criteria established in the 2009 EA revealed that lake trout total annual mortality rates were in excess of 70%, considerably higher than literature suggests are sustainable. Additionally, length-frequency analysis for lake trout caught in gill nets has shifted toward smaller fish in both phases of netting (juvenile and spawner), suggesting that netting was effective at reducing annual cohort strength. Both of these indices suggest that netting has been effective at potentially reducing the lake trout population. However, how this translates to the overall lake trout population as a whole and the associated benefits to bull trout and kokanee remains unknown. Therefore, a five year extension of this previous work is a prudent decision, as information gained in the next five years will likely better inform fisheries managers on long-term, cost effective alternatives for managing lake trout and associated fisheries in Swan Lake.

Prior to approval of the 2009 EA lake trout were documented in Lindbergh Lake in the headwaters of the Swan drainage. Lake trout have recently been documented in Holland Lake, another Swan headwater lake. While data is limited, it is suspected that lake trout establishment in these headwater lakes has the potential to negatively affect the bull trout populations they support. Furthermore, the effect these new lake trout populations have on removal efforts in Swan Lake remains unknown. Future research efforts should be directed at determining how much interaction these lake trout populations have with one another and examining how these populations influence removal efforts in Swan Lake.

Based on the results in the three year summary report for 2009-2011 and comments received during the public comment period for the draft EA, I recommend that the previous experimental removal of lake trout be continued for a period of five years. I will require that by June of each year the results of the previous year's work be made available to the public and that the results will be evaluated to determine whether success criteria are being met. Additionally, I will require that after two years a threshold of minimum bull trout numbers for the Swan drainage be established. This threshold would be an average of some combination of adult and juvenile abundance measures. This index will be compared to bull trout bycatch and abundance trends to determine if the project should be adaptively changed (i.e., continued, modified, or terminated).



July 2, 2012

James R. Satterfield Jr., Ph.D.
Regional Supervisor

Date